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| EXAMINER |
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RASHID, DAVID

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| ART UNIT | PAPER NUMBER |
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2624

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06/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/762,448

Applicant(s)

CHEN, JAU-YUEN

Examiner

David P. Rashid

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/22/2004, 8/11/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

All of the examiner's suggestions presented herein below have been assumed for examination purposes, unless otherwise noted.

Drawings

1. The following is a quote from 37 CFR 1.84(u)(1):

View numbers must be preceded by the abbreviation "FIG."

2. FIG. 1 through FIG. 10 are objected to under 37 CFR 1.84(u)(1) for failing to properly abbreviate the view numbers – suggest capitalizing (e.g. "Fig. 1" to "FIG. 1").

3. The following is a quote from 37 CFR 1.84(h):

All views of the drawing must be grouped together and arranged on the sheet(s) without wasting space, preferably in an upright position, clearly separated from one another, and must not be included in the sheets containing the specifications, claims, or abstract.

4. FIG. 2 through FIG. 5 are objected to under 37 CFR 1.84(h) for failing to properly group together and arrange on sheets without wasting space – it is suggest to group FIG. 2 and FIG. 3 unto one sheet, and FIG. 4 and FIG. 5 on another sheet.

5. It is suggested for FIG. 6 (elements 64 and 65) and FIG. 7 (elements 74 and 75) to rephrase to "From selected transform coefficients...".

Claim Suggestions

6. It is suggested to remove the conjunction "and" from claim 9, line 3 for consistency purposes.

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Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1, 10, 18, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Citta et al. (US 5,161,015 A) in view of Zhang et al. (Detection of Text Captions in Compressed Domain Video, Proceedings of the 2000 ACM workshops on Multimedia, 2000, pg 201 - 204) and Vetro et al. (US 6,490,320 B1).

Regarding **claim 1**, while Citta discloses a method for managing (FIG. 1) a collection of digital color images (FIG. 1, element 10), comprising the steps of:

analyzing digital color images in the collection (FIG. 1, all elements), and for each digital color image analyzed

partitioning that digital color image into a plurality of blocks (Col. 2, lines 42 - 44), each block containing a plurality of transform coefficients (Col. 2, lines 44 - 47), and extracting a feature set (FIG. 1, element 16) derived from transform coefficients of that digital image, the feature set comprising color features (the edge and texture features are also “color features”), edge features (FIG. 6A, element 150; Col. 5, lines 33 – 35; Col. 1, lines 48 - 50), and texture features (FIG. 6A, element 160; Col. 5, lines 33 – 35; Col. 1, lines 48 - 50), and texture features including texture-type (“image types” in reference to “texture” supported in Abstract, line 6 and Col. 1, line 48), Citta does not teach texture features including texture-scale and texture-energy.

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Zhang discloses a method for detection of text captions in compressed domain video (Abstract) that includes calculating the total energy of a DCT block (equations (1) and (2) of Section 2.1). As defined by the examined application, the total energy of a DCT block is “texture-energy”.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of Citta to include texture-energy in its texture features as taught by Zhang “...for detecting text captions in MPEG video stream.”, Zhang, abstract.

While Citta in view of Zhang disclose the combination above, Citta in view of Zhang does not teach texture features including texture-scale.

Vetro discloses an object-based transcoder (FIG. 8) that includes extracting texture features from a compressed bitstream (Col. 8, lines 60 – 63) including texture-scale (FIG. 8, element 850).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Citta in view of Zhang to include texture-scale in its texture features as taught by Vetro “...to map semantic features of content characteristics, such as motion activity, video change information and texture, into a set of parameters that are used to make rate-quality trade-offs in the content-network manager.”, Col. 7, line 64 – Col. 8, line 1.

Regarding **claim 10**, claim 1 recites identical features as in claim 10. Thus, references/arguments equivalent to those presented above for claim 1 are equally applicable to claim 10.

Regarding **claim 18**, Citta discloses wherein the apparatus comprises a processor-controlled device (“control signals” in Col. 1, lines 62 – 67; FIG. 3; FIG. 6A, FIG. 6B). It must also be noted that claim 18 is also supported under the rejection for claim 19.

Regarding **claim 20**, claim 1 recites identical features as in claim 20. Thus, references/arguments equivalent to those presented above for claim 1 are equally applicable to claim 20.

9. **Claims 2, 11, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Citta et al. (US 5,161,015 A) in view of Zhang et al. (Detection of Text Captions in Compressed Domain Video, Proceedings of the 2000 ACM workshops on Multimedia, 2000, pg 201 - 204), Vetro et al. (US 6,490,320 B1), and Barber et al. (US 5,751,286 A).

Regarding **claim 2**, while Citta in view of Zhang and Vetro disclose the method as recited in claim 1, Citta in view of Zhang and Vetro do not teach wherein the digital color images analyzed are specifically formatted thumbnail color images.

Barber discloses an image query method (FIG. 1) wherein the digital color images (Col. 3, lines 15 - 16) analyzed are specifically formatted thumbnail color images (FIG. 1, elements 26, 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the digital color images analyzed by while Citta in view of Zhang and Vetro to be specifically formatted thumbnail color images as taught by Barber because “[t]he thumbnails represent important aspects of the image being sought, such as color, texture, shape and area. Thumbnails representing image characteristics may be dragged to, the image query window

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where they may be arranged into a desired spatial orientation which corresponds to the positioning of image features.”, Barber, Col. 3, line 14 – 19.

Regarding **claim 11**, claim 2 recites identical features as in claim 11. Thus, references/arguments equivalent to those presented above for claim 2 are equally applicable to claim 11.

Regarding **claim 21**, claim 2 recites identical features as in claim 21. Thus, references/arguments equivalent to those presented above for claim 2 are equally applicable to claim 21.

10. **Claims 3, 4, 8, 9, 12, 13, 17, 19, 22, 23, 27, and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Citta et al. (US 5,161,015 A) in view of Zhang et al. (Detection of Text Captions in Compressed Domain Video, Proceedings of the 2000 ACM workshops on Multimedia, 2000, pg 201 - 204), Vetro et al. (US 6,490,320 B1), and Abdel-Mottaleb et al. (US 6,163,622 A).

Regarding **claim 3**, while Citta in view of Zhang and Vetro disclose the method as recited in claim 1, Citta in view of Zhang and Vetro do not teach wherein the partitioning step comprises partitioning each primary color component of the digital color image being analyzed, and the color features comprise a separate color feature for each primary color of that digital color image.

Abdel-Mottaleb discloses an image retrieval system (FIG. 1) that includes partitioning each primary color component (FIG. 3, elements 302, 304, 306) of the digital color image (FIG.

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2, elements 106, 118) being analyzed, and the color features comprise a separate color feature (FIG. 3, elements 308, 310, 312) for each primary color of that digital color image.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the partitioning step of Citta in view of Zhang and Vetro to include partitioning each primary color component of the digital color image being analyzed, and the color features comprise a separate color feature for each primary color of that digital color image as taught by Abdel-Mottaleb “to provide an image retrieval system of the kind set forth with an improved mechanism for determining the similarity between the candidate image and the query image.”, Abdel-Mottaleb, Col. 2, lines 13 – 16.

Regarding **claim 4**, while Citta in view of Zhang and Vetro disclose the method as recited in claim 1, Citta in view of Zhang and Vetro do not teach wherein the separate color features are represented by separate histograms, one for each primary color.

Abdel-Mottaleb discloses an image retrieval system (FIG. 1) that includes the separate color features being represented by separate histograms (FIG. 3, elements 308, 310, 312), one for each primary color.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the partitioning step of Citta in view of Zhang and Vetro to include the separate color features being represented by separate histograms, one for each primary color as taught by Abdel-Mottaleb “to provide an image retrieval system of the kind set forth with an improved mechanism for determining the similarity between the candidate image and the query image.”, Abdel-Mottaleb, Col. 2, lines 13 – 16.

Regarding **claim 8**, while Citta in view of Zhang and Vetro disclose the method as recited in claim 1, further comprising the step of applying the partitioning (refer to references/arguments in claim 1) and extracting steps (refer to references/arguments in claim 1) to a new digital color image to be used as a query image (FIG. 1, element 10 is a video with successive frames, each being a new digital color image to be used as a query image), Citta in view of Zhang and Vetro do not teach further comprising the steps of: comparing the feature set of the query image to the feature set of each digital color image in at least a subset of the collection; and identifying each digital color image in the collection that has a feature set that is similar to the feature set of the query image.

Abdel-Mottaleb discloses an image retrieval system (FIG. 1) that includes comprising the steps of:

comparing the feature set (FIG. 2, elements 110, 202, 204) of the selected query image to the feature set (FIG. 2, elements 114, 206, 208) of each digital color image (FIG. 2, element 118) in at least a subset of the collection (FIG. 2, elements 102, 104); and

identifying each digital color image in the collection that has a feature set that is similar (FIG. 2, elements 120, 210, 212, 214) to the feature set of the selected query image.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Citta in view of Zhang and Vetro to include comprising the steps of: comparing the feature set of the query image to the feature set of each digital color image in at least a subset of the collection; and identifying each digital color image in the collection that has a feature set that is similar to the feature set of the query image as taught by Abdel-Mottaleb “to provide an image

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retrieval system of the kind set forth with an improved mechanism for determining the similarity between the candidate image and the query image.”, Abdel-Mottaleb, Col. 2, lines 13 – 16.

Regarding **claim 9**, while Citta in view of Zhang and Vetro disclose the method as recited in claim 1, Citta in view of Zhand and Vetro doe not teach further comprising the steps of: selecting a particular digital color image in the collection as a query image; and comparing the feature set of the selected query image to the feature set of each digital color image in at least a subset of the collection; and identifying each digital color image in the collection that has a feature set that is similar to the feature set of the selected query image.

Abdel-Mottaleb discloses an image retrieval system (FIG. 1) that includes comprising the steps of:

selecting a particular digital color image in the collection (“...to compose the query image from a number of existing images...” in Col. 4, lines 3 - 4) as a query image (FIG. 2, element 106); and

comparing the feature set (FIG. 2, elements 110, 202, 204) of the selected query image to the feature set (FIG. 2, elements 114, 206, 208) of each digital color image (FIG. 2, element 118) in at least a subset of the collection (FIG. 2, elements 102, 104); and

identifying each digital color image in the collection that has a feature set that is similar (FIG. 2, elements 120, 210, 212, 214) to the feature set of the selected query image.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Citta in view of Zhang and Vetro to include comprising the steps of: selecting a particular digital color image in the collection as a query image; and comparing the feature set of the selected query image to the feature set of each digital color image in at least a subset of the

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collection; and identifying each digital color image in the collection that has a feature set that is similar to the feature set of the selected query image as taught by Abdel-Mottaleb “to provide an image retrieval system of the kind set forth with an improved mechanism for determining the similarity between the candidate image and the query image.”, Abdel-Mottaleb, Col. 2, lines 13 – 16.

Regarding **claim 12**, claim 3 recites identical features as in claim 12. Thus, references/arguments equivalent to those presented above for claim 3 are equally applicable to claim 12.

Regarding **claim 13**, claim 4 recites identical features as in claim 13. Thus, references/arguments equivalent to those presented above for claim 4 are equally applicable to claim 13.

Regarding **claim 17**, claim 8 recites identical features as in claim 17. Thus, references/arguments equivalent to those presented above for claim 8 are equally applicable to claim 17.

Regarding **claim 19**, while Citta in view of Zhang and Vetro discloses the apparatus as recited in claim 18, Citta in view of Zhang and Vetro does not specifically disclose wherein the processor-controlled device comprises a personal computer, a personal digital assistant, or a cell phone.

Abdel-Mottaleb discloses an image retrieval system (FIG. 1) that teaches wherein the processor-controlled device comprises a personal computer (FIG. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the processor-controlled device of Citta in view of Zhang and Vetro to be a

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personal computer as taught by Abdel-Mottaleb “to provide an image retrieval system of the kind set forth with an improved mechanism for determining the similarity between the candidate image and the query image.”, Abdel-Mottaleb, Col. 2, lines 13 – 16.

Regarding **claim 22**, claim 3 recites identical features as in claim 22. Thus, references/arguments equivalent to those presented above for claim 3 are equally applicable to claim 22.

Regarding **claim 23**, claim 4 recites identical features as in claim 23. Thus, references/arguments equivalent to those presented above for claim 4 are equally applicable to claim 23.

Regarding **claim 27**, claim 8 recites identical features as in claim 27. Thus, references/arguments equivalent to those presented above for claim 8 are equally applicable to claim 27.

Regarding **claim 28**, claim 9 recites identical features as in claim 28. Thus, references/arguments equivalent to those presented above for claim 9 are equally applicable to claim 28.

11. **Claims 5, 6, 14, 15, 24, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Citta et al. (US 5,161,015 A) in view of Zhang et al. (Detection of Text Captions in Compressed Domain Video, Proceedings of the 2000 ACM workshops on Multimedia, 2000, pg 201 - 204), Vetro et al. (US 6,490,320 B1), Abdel-Mottaleb et al. (US 6,163,622 A), and Park et al. (US 2002/0136454 A1).

While Citta in view of Zhang and Vetro disclose the method as recited in claim 1, Citta in view of Zhang and Vetro do not teach wherein the partitioning step comprises partitioning each primary color component of the digital color image being analyzed, and the edge features comprise a separate edge feature for each primary color of that digital color image.

Abdel-Mottaleb discloses an image retrieval system (FIG. 1) that includes partitioning each primary color component (FIG. 3, elements 302, 304, 306) of the digital color image (FIG. 2, elements 106, 118) being analyzed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the partitioning step of Citta in view of Zhang and Vetro to include partitioning each primary color component of the digital color image being analyzed as taught by Abdel-Mottaleb “to provide an image retrieval system of the kind set forth with an improved mechanism for determining the similarity between the candidate image and the query image.”, Abdel-Mottaleb, Col. 2, lines 13 – 16.

While Citta in view of Zhang, Vetro, and Abdel-Mottaleb disclose the invention above, Citta in view of Zhang, Vetro, and Abdel-Mottaleb does not teach the edge features comprising a separate edge feature for each primary color of that digital color image.

Park discloses a non-linear quantization and similarity matching method for retrieving image data (FIG. 1) that discloses generating edge histograms (paragraph [0003]) from a digital color image (FIG. 1, element S101; FIG.2, element 200).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for each of the primary color components of Citta in view of Zhang, Vetro, and Abdel-Mottaleb to include edge features comprising separate edge feature of the digital color image as

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taught by Park "...to provide a method for retrieving corresponding images in response to a query image based on a database with a high retrieval speed and accuracy.", Park, paragraph [0008].

Regarding **claim 14**, claim 5 recites identical features as in claim 14. Thus, references/arguments equivalent to those presented above for claim 5 are equally applicable to claim 14.

Regarding **claim 15**, claim 6 recites identical features as in claim 15. Thus, references/arguments equivalent to those presented above for claim 6 are equally applicable to claim 15.

Regarding **claim 24**, claim 5 recites identical features as in claim 24. Thus, references/arguments equivalent to those presented above for claim 5 are equally applicable to claim 24.

Regarding **claim 25**, claim 6 recites identical features as in claim 25. Thus, references/arguments equivalent to those presented above for claim 6 are equally applicable to claim 25.

12. **Claims 7, 16, and 26** is rejected under 35 U.S.C. 103(a) as being unpatentable over Citta et al. (US 5,161,015 A) in view of Zhang et al. (Detection of Text Captions in Compressed Domain Video, Proceedings of the 2000 ACM workshops on Multimedia, 2000, pg 201 - 204), Vetro et al. (US 6,490,320 B1), and Nelson et al. (US 6,243,713 B1).

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Regarding **claim 7**, while Citta in view of Zhang and Vetro disclose the method as recited in claim 1, Citta in view of Zhang and Vetro do not teach wherein the texture-type feature, texture-scale feature and texture-energy feature are represented by respective histograms.

Nelson discloses a multimedia document retrieval by application of multimedia queries to a unified index of multimedia data for a plurality of multimedia data (FIG. 2) that includes texture features being represented by respective histograms (Col. 11, lines 35 - 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the texture features including texture-type feature, texture-scale feature and texture-energy feature as taught by Citta in view of Zhang and Vetro to be included in the texture features being represented by respective histograms as taught by Nelson "...to provide a system, method, and software product that retrieves compound documents in response to queries that include various multimedia elements in a structured form, including text, image features, audio, or video.", Nelson, Col. 2, lines 12 – 16.

Regarding **claim 16**, claim 7 recites identical features as in claim 16. Thus, references/arguments equivalent to those presented above for claim 7 are equally applicable to claim 16.

Regarding **claim 26**, claim 7 recites identical features as in claim 26. Thus, references/arguments equivalent to those presented above for claim 7 are equally applicable to claim 26.

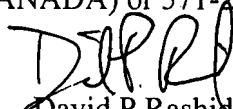
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Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached Monday - Friday 8:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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